



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/037,213	11/09/2001	Egon Mergenthaler	13292-009001/2001E17454DE	6469
26161	7590	08/10/2004	EXAMINER FARAHANI, DANA	
FISH & RICHARDSON PC 225 FRANKLIN ST BOSTON, MA 02110			ART UNIT 2814	PAPER NUMBER

DATE MAILED: 08/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/037,213

Applicant(s)

MERGENTHALER ET AL.

Examiner

Dana Farahani

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 1-3 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent Application Publication 2002/0043686 of Bolam et al., hereinafter Bolam.

Regarding claims 1-3, Bolam discloses in figure 7A a semiconductor substrate 210 having a chip 200 formed thereon; a kerf region (the right half portion of region 200') proximate the chip; and a conductive connector 202 forming a connection between the chip and the kerf region (see page 4, paragraphs 0051 and 0052).

Regarding claim 9, 202 is a metal (see page 4, paragraph 0051, the last line).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2814

4. Claims 4, 5, 6, 8, 10-12, 14, 15, 17-19, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolam.

Regarding claims 4-8, 10, 12, 17, and 19, Bolam discloses in figure 7A, the limitation in claim 5, as above discussed, except for a device in region 200.

Bolam discloses in figure 2C a chip 100 wherein a FET device is formed in the middle. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the FET device in figure 2C in chip 200 of figure 7A in order to make a FET transistor in that figure, and further ground connector 202 in order to establish a reference potential for the device.

Regarding claims 11 and 18, 202 is a metal (see page 4, paragraph 0051, the last line).

Regarding claim 21, see figure 7A, wherein an end portion of 202 is removed.

Regarding claim 14, see page 4, paragraph 0052.

Regarding claims 15 and 22, Bolam uses a mask to remove 202 (see page 4, paragraph 0052). Using a mask is often associated with etching. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use etching to remove parts of 202.

5. Claims 13 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolam as applied to claim 10 above, and further in view of Chen et al., hereinafter Chen (US Patent 4,534,816).

Bolam substantially discloses the limitations in the claims, as discussed above, except for use of plasma etching.

Chen discloses the advantages of plasma etching such as high etching rate and improved etch uniformity. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use this kind of etching to benefit from the advantages associated with this kind of etching, while doing the cutting process of the Bolam structure.

6. Claims 16 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolam as applied to claims 13 and 21 above, and further in view of Lee et al., hereinafter Lee (U.S. Patent 6,251,782).

Bolam renders obvious the claimed invention, as above discussed, except for ion beam milling being used to remove parts of the conductive connector.

Lee discloses ion beam milling is used to remove layers of materials accurately (see column 5, lines 33-56). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use this method to remove parts of layer 202 because of the method accuracy.

### ***Product-by-Process Limitations***

A comparison of the recited process with the prior art process does NOT serve to resolve the issue concerning patentability of the product. *In re Fessman*, 489 F2d 742, 180 USPQ 324 (CCPA 1974). Whether a product is patentable depends on whether it is known in the art or it is obvious, and is not governed by whether the process by which is made is patentable. *In re Klug*, 333 F2d 905, 142 USPQ 161 (CCPA 1964). In an ex parte case, product by process claims are not constructed as being limited to the product formed by the specific process recited. *In re Hirao*

Art Unit: 2814

et al., 535 F2d 67, 190 USPQ 15, see footnote 3 (CCPA 1976). Therefore, in claim 5, the plasma etching process step is given no patentable weight.

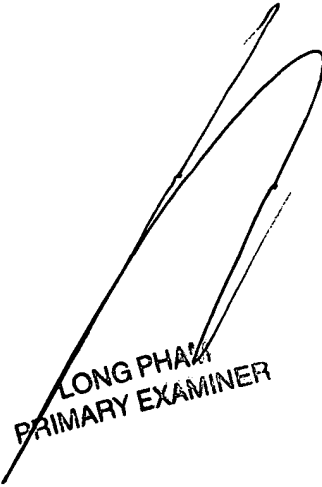
### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dana Farahani whose telephone number is (571)272-1706. The examiner can normally be reached on M-F 9:00AM - 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M Fahmy can be reached on (571)272-1705. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

D. Farahani



LONG PHAM  
PRIMARY EXAMINER